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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/971,711	10/09/2001	Satoshi Sugaya	Q66406	4242

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EXAMINER
JACKSON, ANDRE K

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/971,711	SUGAYA ET AL.	
	Examiner	Art Unit	
	Andre' K. Jackson	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7 and 9-13* is/are rejected.

7)☒ Claim(s) *4,6 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroiwa et al. in view of Scheinbeim et al. and Bennewitz et al.

Regarding claim 1, Kuroiwa et al. discloses a "Polymer capacitative moisture sensitive device comprising heating means" which has an insulating substrate (1), a moisture sensitive layer (3), a lower electrode (2) having a noble metal (Column 3, line 14) and an upper electrode (4) having a noble metal (Column 3, line 23). What is not disclosed by Kuroiwa et al. is the upper electrode having a porous body. However, Scheinbeim et al. discloses a "Humidity sensor" which has a porous electrode (Column 2, line 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Kuroiwa et al. to include a porous electrode as taught by Scheinbeim et al since it is necessary to make the penetration time of the moisture to the sensitive layer as short as possible. Neither Kuroiwa et al. nor Scheinbeim et al.

discloses where the upper electrode is joined to the moisture sensitive layer and part of the substrate. However, Bennewitz et al. discloses a "Relative humidity detector systems and method of increasing the calibration period of relative humidity detector systems" which shows where the upper electrode is joined to the moisture sensitive layer and part of the substrate (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Kuroiwa et al. to include where the upper electrode is joined to the moisture sensitive layer and part of the substrate as taught by Bennewitz et al. since this structure enhances the performance of the sensor.

Regarding claim 2, Kuroiwa et al. discloses a lower electrode predominantly containing platinum (Column 3, line 14).

Regarding claim 3, Kuroiwa et al. does not disclose where the lower electrode comprise a porous body. However, Scheinbeim et al. discloses a porous electrode (Column 2, line 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Kuroiwa et al. to include a porous electrode as taught by Scheinbeim et al since it is necessary to make the penetration time of the moisture to the sensitive layer as short as possible.

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroiwa et al. in view of Scheinbeim et al. and Bennewitz et al. as applied to claim 1 above, and further in view of Sakai et al.

Regarding claim 5, neither Kuriowa et al. nor Scheinbeim et al. nor Bennewitz discloses where the temperature measurement resistor is provided in the insulating substrate. However, Sakai et al. discloses a "Moisture sensitive element and method of manufacturing the same" which shows the temperature measurement resistor (105 temperature sensor) is provided in the insulating substrate (101, Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Kuriowa et al. to include where the temperature measurement resistor is provided in the insulating substrate as taught by Sakai et al. since this make the measurement of the temperature more accurate.

Regarding claim 7, Kuriowa et al. discloses where the temperature measurement resistor (9) is located directly below the moisture sensitive layer (3) (Figure 7).

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroiwa et al. in view of Scheinbeim et al. and Bennewitz et al. as applied to claim 1 above, and further in view of Kojima et al.

Regarding claims 9 and 10, Kuroiwa et al. does not disclose where the size of the pores in the upper and lower electrodes is 0.5-20μm. However, Kojima et al. disclose a "Pump cell element for air-fuel ratio sensor" which disclose where the size of the pores in the electrode is 20μm (Abstract). Therefore, to modify Sone to include where the size of the pores in the upper and lower electrodes is 20μm as taught by Kojima et al. is clearly within the purview of the skilled artisan since this modification would give a good opening percentage for calculations.

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroiwa et al. in view of Scheinbeim et al. and Bennewitz et al. as applied to claim 1 above, and further in view of Tanino et al.

Regarding claim 11, Kuroiwa et al. does not disclose where the moisture sensitive layer is 0.05-0.2μm. However, Tanino et al. disclose a "Humidity sensing element" that disclose a moisture sensitive layer that is 0.05-0.2μm [0.01-3μm] (Column 3). Therefore, it would have been obivous to modify Kuroiwa et al. to include where the moisture sensitive layer is 0.05-0.2μm as taught by Tanino et al. since this modification would help to keep particulates from the atmosphere from depositing onto the humidity-sensing parts.

Regarding claims 12 and 13, Kuroiwa et al. does not disclose where particles are incorporated in an amount of 1-20 weight percentage

of the upper and lower electrode. However, Tanino et al. has particles are incorporated in an amount of 1-20 weight percentage on the electrode (Column 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to mdofiy Kuroiwa et al. to include particles incorporated in an amount of 1-20 weight percentage on the electrode as taught by Tanino et al. since this modification would give good resistance-humidity characteristics.

6. Claims 4,6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 03/19/03 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir.

1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Bennewitz et al. disclose that this is used to provide uniform distribution of current, to spread the d.c. field through the Al_2O_3 layer from the upper electrode.

Applicant's arguments, see pages 4 and 8, filed 03/19/03, have been fully considered and are persuasive. The rejection of claims 4 and 8 has been withdrawn.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A.J.
May 17, 2003

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800